Space Weather Forecast

Issued on Saturday, 23 December 2023 at 01:22 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of isolated Moderate flares throughout.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Solar activity has been Low, with a region close to the southwest limb the most active. A further large region in the southeast appears stable. These are two of ten regions on the visible disc, with the remaining regions all either small or stable. No potential Earth-directed CMEs (coronal mass ejections) have been observed on available imagery.

Solar Wind / Geomagnetic Activity: Solar winds have been at ambient levels through the last 24 hours. Total magnetic field strength has been weak, with the north-south component also varying weakly. Total geomagnetic activity has been Quiet.

Energetic Particles / Solar Radiation: High energy proton flux has been at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Low activity is forecast, with a chance of Moderate activity. A slight reduction is forecast from 24 December as AR3519, the most active region, rotates off the visible disc.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are forecast. Solar wind speeds are expected to remain at mainly background levels through the next four days in the absence of fast solar winds or significant CME arrivals. Geomagnetic activity is expected to remain Quiet to Unsettled.

Energetic Particles / Solar Radiation: Solar radiation is currently at background levels, with just a slight chance of solar radiation storms, should there be any larger flares on the western side of the disc.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	40	40	30	30
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	10	10	10	10
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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